

SEQUENCE LISTING

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SPENCER, JEFFREY A.

<120> METHODS AND COMPOSITIONS FOR STABILIZING MICROTUBULES
AND INTERMEDIATE FILAMENTS IN STRIATED MUSCLE CELLS

<130> MYOG:028USD1

<140> UNKNOWN

<141> 2004-02-10

<150> 09/908,988

<151> 2001-07-18

<150> 60/219,020

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<170> PatentIn Ver. 2.1

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tgaccgagga aggggtgcaca ggcaggggag aaggccaacg acagggccac agcgaggcag 180

gctccagagc	gccgcggg	atg	aac	ttc	acg	gtg	ggt	ttc	aag	ccg	ctg	cta	231
		Met	Asn	Phe	Thr	Val	Gly	Phe	Lys	Pro	Leu	Leu	
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ggg	gat	gcg	cac	aac	atg	gac	aac	ttg	gag	aag	cag	ctc	att	tgc	ccc	279
Gly	Asp	Ala	His	Asn	Met	Asp	Asn	Leu	Glu	Lys	Gln	Leu	Ile	Cys	Pro	
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atc	tgc	ctg	gag	atg	ttc	tcc	aag	ccc	gtg	gtg	atc	ttg	ccc	tgc	caa	327
Ile	Cys	Leu	Glu	Met	Phe	Ser	Lys	Pro	Val	Val	Ile	Leu	Pro	Cys	Gln	
		30					35					40				

cac	aac	ctg	tgc	cgc	aag	tgt	gcc	aac	gac	gtc	ttc	cag	gcc	tct	aat	375
His	Asn	Leu	Cys	Arg	Lys	Cys	Ala	Asn	Asp	Val	Phe	Gln	Ala	Ser	Asn	
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cct	ctg	tgg	caa	tcc	cgg	ggc	tcc	aca	acg	gtg	tct	tca	gga	gga	cgt	423
Pro	Leu	Trp	Gln	Ser	Arg	Gly	Ser	Thr	Thr	Val	Ser	Ser	Gly	Gly	Arg	

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gtc tat ggc ctg cag cgg aac ctg cta gtg gag aac atc att gac atc	519			
Val Tyr Gly Leu Gln Arg Asn Leu Leu Val Glu Asn Ile Ile Asp Ile				
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tac aag cag gag tcc tcc cgg cca ctg cac gcc aag gct gaa cag cac	567			
Tyr Lys Gln Glu Ser Ser Arg Pro Leu His Ala Lys Ala Glu Gln His				
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Leu Met Cys Glu Glu His Glu Asp Glu Lys Ile Asn Ile Tyr Cys Leu				
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Ser Cys Glu Val Pro Thr Cys Ser Leu Cys Lys Val Phe Gly Ala His				
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Lys Asp Cys Glu Val Ala Pro Leu Pro Thr Ile Tyr Lys Arg Gln Lys				
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agt gag ctg agc gat ggc atc gcg atg ctg gtg gcg ggc aat gac cgt	759			
Ser Glu Leu Ser Asp Gly Ile Ala Met Leu Val Ala Gly Asn Asp Arg				
175 180 185				
gtg cag gca gtg atc acc cag atg gag gag gtg tgc cag acc att gag	807			
Val Gln Ala Val Ile Thr Gln Met Glu Glu Val Cys Gln Thr Ile Glu				
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gac aac agc cgc aga cag aag caa ctg tta aac cag agg ttc gag acc	855			
Asp Asn Ser Arg Arg Gln Lys Gln Leu Leu Asn Gln Arg Phe Glu Thr				
205 210 215				
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Leu Cys Ala Val Leu Glu Glu Arg Lys Gly Glu Leu Leu Gln Ala Leu				
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gcc cgg gag cag gag gag aag ttg cag cgc gtg cgg ggc ctc atc cgc	951			
Ala Arg Glu Gln Glu Glu Lys Leu Gln Arg Val Arg Gly Leu Ile Arg				
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cag tac gga gac cac ttg gag ggc tcc tca aag ctg gtg gag tcc gcc	999			
Gln Tyr Gly Asp His Leu Glu Gly Ser Ser Lys Leu Val Glu Ser Ala				
255 260 265				
atc cag tcc atg gag gag ccg cag atg gct ctc tac ctc cag cag gca	1047			
Ile Gln Ser Met Glu Glu Pro Gln Met Ala Leu Tyr Leu Gln Gln Ala				
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Lys Glu Leu Ile Asn Lys Val Gly Ala Met Ser Lys Val Glu Leu Ala				
285 290 295				

gga cgg ccg gag cca ggc tat gag agc atg gag caa ttc tct gtg agc 1143
 Gly Arg Pro Glu Pro Gly Tyr Glu Ser Met Glu Gln Phe Ser Val Ser
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 Val Glu His Val Ala Glu Met Leu Arg Thr Ile Asp Phe Gln Pro Gly
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gcc gct ggg gat gaa gag gat gac gac atg gct ttg gat ggg gag gag 1239
 Ala Ala Gly Asp Glu Glu Asp Asp Asp Met Ala Leu Asp Gly Glu Glu
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 Gly Asn Ala Gly Leu Glu Glu Glu Arg Leu Asp Val Pro Glu Gly Ser
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ggc ctg cac tgacccgact ctgatccaga gcgcacaccc gaagcgggag 1336
 Gly Leu His
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Phe Ser Lys Pro Val Val Ile Leu Pro Cys Gln His Asn Leu Cys Arg
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Lys Cys Ala Asn Asp Val Phe Gln Ala Ser Asn Pro Leu Trp Gln Ser
 50 55 60

Arg Gly Ser Thr Thr Val Ser Ser Gly Gly Arg Phe Arg Cys Pro Ser
 65 70 75 80

Cys Arg His Glu Val Val Leu Asp Arg His Gly Val Tyr Gly Leu Gln
 85 90 95

Arg Asn Leu Leu Val Glu Asn Ile Ile Asp Ile Tyr Lys Gln Glu Ser
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Ser Arg Pro Leu His Ala Lys Ala Glu Gln His Leu Met Cys Glu Glu
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His Glu Asp Glu Lys Ile Asn Ile Tyr Cys Leu Ser Cys Glu Val Pro

130	135	140
Thr Cys Ser Leu Cys Lys Val Phe Gly Ala His Lys Asp Cys Glu Val		
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Ala Pro Leu Pro Thr Ile Tyr Lys Arg Gln Lys Ser Glu Leu Ser Asp		
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Gly Ile Ala Met Leu Val Ala Gly Asn Asp Arg Val Gln Ala Val Ile		
	180	185 190
Thr Gln Met Glu Glu Val Cys Gln Thr Ile Glu Asp Asn Ser Arg Arg		
	195	200 205
Gln Lys Gln Leu Leu Asn Gln Arg Phe Glu Thr Leu Cys Ala Val Leu		
	210	215 220
Glu Glu Arg Lys Gly Glu Leu Leu Gln Ala Leu Ala Arg Glu Gln Glu		
	225	230 235 240
Glu Lys Leu Gln Arg Val Arg Gly Leu Ile Arg Gln Tyr Gly Asp His		
	245	250 255
Leu Glu Gly Ser Ser Lys Leu Val Glu Ser Ala Ile Gln Ser Met Glu		
	260	265 270
Glu Pro Gln Met Ala Leu Tyr Leu Gln Gln Ala Lys Glu Leu Ile Asn		
	275	280 285
Lys Val Gly Ala Met Ser Lys Val Glu Leu Ala Gly Arg Pro Glu Pro		
	290	295 300
Gly Tyr Glu Ser Met Glu Gln Phe Ser Val Ser Val Glu His Val Ala		
	305	310 315 320
Glu Met Leu Arg Thr Ile Asp Phe Gln Pro Gly Ala Ala Gly Asp Glu		
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aaa	gag	cag	cag	acc	atg	gat	aac	ttg	gaa	aag	caa	ctg	atc	tgt	ccc	160
Lys	Glu	Gln	Gln	Thr	Met	Asp	Asn	Leu	Glu	Lys	Gln	Leu	Ile	Cys	Pro	
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atc	tgc	cta	gag	atg	ttc	acg	aag	cct	gtg	gtc	att	ctc	cct	tgc	cag	208
Ile	Cys	Leu	Glu	Met	Phe	Thr	Lys	Pro	Val	Val	Ile	Leu	Pro	Cys	Gln	
		30					35					40				
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His	Asn	Leu	Cys	Arg	Lys	Cys	Ala	Ser	Asp	Ile	Phe	Gln	Ala	Ser	Asn	
	45					50					55					
ccg	tac	tta	ccc	aca	aga	gga	ggc	acc	acc	gtg	gca	tca	ggg	ggc	cgc	304
Pro	Tyr	Leu	Pro	Thr	Arg	Gly	Gly	Thr	Thr	Val	Ala	Ser	Gly	Gly	Arg	
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ttc	cgc	tgt	ccc	tcc	tgc	aga	cat	gag	gtg	gtg	tta	gac	aga	cat	ggg	352
Phe	Arg	Cys	Pro	Ser	Cys	Arg	His	Glu	Val	Val	Leu	Asp	Arg	His	Gly	
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gtc	tat	gga	ctg	cag	agg	aac	ctg	ctc	gtg	gaa	aac	att	att	gat	atc	400
Val	Tyr	Gly	Leu	Gln	Arg	Asn	Leu	Leu	Val	Glu	Asn	Ile	Ile	Asp	Ile	
			95				100						105			
tac	aag	cag	gaa	tcc	acc	agg	cca	gaa	aaa	aaa	ttg	gac	cag	ccc	atg	448
Tyr	Lys	Gln	Glu	Ser	Thr	Arg	Pro	Glu	Lys	Lys	Leu	Asp	Gln	Pro	Met	
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Cys	Glu	Glu	His	Glu	Glu	Glu	Arg	Ile	Asn	Ile	Tyr	Cys	Leu	Asn	Cys	
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gaa	gtg	ccc	acc	tgt	tcc	ttg	tgc	aag	gtt	ttt	ggc	gcc	cat	aag	gac	544
Glu	Val	Pro	Thr	Cys	Ser	Leu	Cys	Lys	Val	Phe	Gly	Ala	His	Lys	Asp	
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tgc	cag	gtg	gct	ccc	ctg	act	cat	gtg	ttc	cag	agg	cag	aag	tca	gag	592
Cys	Gln	Val	Ala	Pro	Leu	Thr	His	Val	Phe	Gln	Arg	Gln	Lys	Ser	Glu	
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ctc	agt	gat	ggg	att	gct	gta	ctt	gtg	gga	agc	aac	gat	aga	gtc	cag	640
Leu	Ser	Asp	Gly	Ile	Ala	Val	Leu	Val	Gly	Ser	Asn	Asp	Arg	Val	Gln	
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Gly	Val	Ile	Ser	Gln	Leu	Glu	Asp	Thr	Cys	Lys	Thr	Ile	Glu	Glu	Cys	
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tgc	aga	aag	cag	aaa	cag	gac	ctg	tgt	gag	aaa	ttt	gat	cac	cta	tac	736
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Thr Gln Glu Glu Lys Leu Glu His Val Arg Thr Leu Ile Arg Lys Tyr	
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Ser Asp His Leu Glu Asn Val Ser Lys Leu Val Glu Ser Gly Ile Gln	
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Phe Met Asp Glu Pro Glu Met Ala Val Phe Leu Gln Asn Ala Lys Thr	
270 275 280	
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Glu Glu Glu Asp Ala Gly Glu Ile Asp Glu Glu Gly Glu Gly Glu Asp	
335 340 345	
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Ala Val Glu Val Glu Glu Ala Glu Asn Val Gln Ile Ala Ser Ser Gly	
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Glu Glu Glu Ser Leu Glu Lys Ala Ala Glu Pro Ser Gln Leu Pro Ala	
365 370 375	
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Glu Leu Gln Val Ala Pro Glu Pro Leu Pro Ala Ser Ser Pro Glu Pro	
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Phe Ser Ser Met Pro Pro Ala Ala Asp Val Leu Val Thr Gln Gly Glu	
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gtg gtg ccc att ggc tct cag cag acc aca cag tct gaa act tca ggc	1360
Val Val Pro Ile Gly Ser Gln Gln Thr Thr Gln Ser Glu Thr Ser Gly	
415 420 425	
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Pro Ser Ala Ala Glu Thr Ala Asp Pro Leu Phe Tyr Pro Ser Trp Tyr	
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Phe	Thr	Lys	Pro	Val	Val	Ile	Leu	Pro	Cys	Gln	His	Asn	Leu	Cys	Arg
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Thr	Arg	Pro	Glu	Lys	Lys	Leu	Asp	Gln	Pro	Met	Cys	Glu	Glu	His	Glu
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Val Glu Ala Ser Lys Ala Phe Gln Met Glu Lys Leu Glu Gln Gly Tyr
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Glu Ile Met Ser Asn Phe Thr Val Asn Leu Asn Arg Glu Glu Lys Ile
305 310 315 320

Ile Arg Glu Ile Asp Phe Ser Arg Glu Glu Glu Glu Glu Asp Ala
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Gly Glu Ile Asp Glu Glu Gly Glu Gly Glu Asp Ala Val Glu Val Glu
340 345 350

Glu Ala Glu Asn Val Gln Ile Ala Ser Ser Gly Glu Glu Glu Ser Leu
355 360 365

Glu Lys Ala Ala Glu Pro Ser Gln Leu Pro Ala Glu Leu Gln Val Ala
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385 390 395 400

Pro Ala Ala Asp Val Leu Val Thr Gln Gly Glu Val Val Pro Ile Gly
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Thr Ala Asp Pro Leu Phe Tyr Pro Ser Trp Tyr Lys Gly Gln Ser Arg
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Lys Thr Ser Ser Asn Pro Pro Cys Thr His Gly Ser Glu Gly Leu Gly
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Gln Ile Gly Pro Leu Gly Ile Glu Asp Ser Ser Val Gln Ser Ala Glu
465 470 475 480

Val Ala Glu Ala Ala Thr Asn Glu Gln Ala Ala Val Ser Gly Lys Glu
485 490 495

Ser Ser Ser Thr Ala Ala Thr Ser Gln Ile Gly Phe Glu Ala Pro Ser
500 505 510

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Glu
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 atg gat tat aaa tct agc ctg att cct gat gga aac gct atg gag aac 346
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 cct gtg gtc atc ctg ccc tgc caa cac aac ctc tgc cgg aag tgt gcc 442
 Pro Val Val Ile Leu Pro Cys Gln His Asn Leu Cys Arg Lys Cys Ala
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 Asn Asp Ile Phe Gln Ala Ala Asn Pro Tyr Trp Thr Asn Arg Gly Gly
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 tca gtg tcc atg tct gga ggt cgt ttc cgt tgc ccc tcg tgc cgc cat 538
 Ser Val Ser Met Ser Gly Gly Arg Phe Arg Cys Pro Ser Cys Arg His
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 Glu Val Ile Met Asp Arg His Gly Val Tyr Gly Leu Gln Arg Asn Leu
 85 90 95
 ctg gtg gaa aac atc att gac atc tac aag cag gag tgc tcc agt cgg 634
 Leu Val Glu Asn Ile Ile Asp Ile Tyr Lys Gln Glu Cys Ser Ser Arg
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 ccc ctg cag aaa ggc agc cac ccg atg tgc aag gaa cac gaa gac gag 682
 Pro Leu Gln Lys Gly Ser His Pro Met Cys Lys Glu His Glu Asp Glu
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 aag atc aac atc tac tgt ctc acg tgt gag gtg cct act tgc tcc ttg 730
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35 40 45

Asn Asp Ile Phe Gln Ala Ala Asn Pro Tyr Trp Thr Asn Arg Gly Gly
50 55 60

Ser Val Ser Met Ser Gly Gly Arg Phe Arg Cys Pro Ser Cys Arg His
65 70 75 80

Glu Val Ile Met Asp Arg His Gly Val Tyr Gly Leu Gln Arg Asn Leu
85 90 95

Leu Val Glu Asn Ile Ile Asp Ile Tyr Lys Gln Glu Cys Ser Ser Arg
100 105 110

Pro Leu Gln Lys Gly Ser His Pro Met Cys Lys Glu His Glu Asp Glu
115 120 125

Lys Ile Asn Ile Tyr Cys Leu Thr Cys Glu Val Pro Thr Cys Ser Leu
130 135 140

Cys Lys Val Phe Gly Ala His Gln Ala Cys Glu Val Ala Pro Leu Gln
145 150 155 160

Ser Ile Phe Gln Gly Gln Lys Thr Glu Leu Ser Asn Cys Ile Ser Met
165 170 175

Leu Val Ala Gly Asn Asp Arg Val Gln Thr Ile Ile Ser Gln Leu Glu
180 185 190

Asp Ser Cys Arg Val Thr Lys Glu Asn Ser His Gln Val Lys Glu Glu
195 200 205

Leu Ser Gln Lys Phe Asp Thr Leu Tyr Ala Ile Leu Asp Glu Lys Lys
210 215 220

Ser Glu Leu Leu Gln Arg Ile Thr Gln Glu Gln Glu Glu Lys Leu Gly
225 230 235 240

Phe Ile Glu Ala Leu Ile Leu Gln Tyr Arg Glu Gln Leu Glu Lys Ser
245 250 255

Thr Lys Leu Val Glu Thr Ala Ile Gln Ser Leu Asp Glu Pro Gly Gly
260 265 270

Ala Thr Phe Leu Ser Ser Ala Lys Gln Leu Ile Lys Ser Ile Val Glu
275 280 285

Ala Ser Lys Gly Cys Gln Leu Gly Lys Thr Glu Gln Gly Phe Glu Asn
290 295 300

Met Asp Tyr Phe Thr Leu Asp Leu Glu His Ile Ala Glu Ala Leu Arg
305 310 315 320

Ala Ile Asp Phe Gly Thr Gly Lys Gly Cys Asp Val Thr Cys Leu Thr
325 330 335

Phe Glu Arg Gln Arg Ser Ser
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